

**THE REDISCOVERY OF *CHILASA MOERNERI MAYRHOFERI*
(BANG-HAAS, 1939) (LEPIDOPTERA: PAPILIONIDAE) IN NEW
BRITAIN, PAPUA NEW GUINEA AND DESCRIPTION OF THE
FEMALE**

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Abstract

Chilasa moerneri mayrhoferi (Bang-Haas), previously known only from the male holotype collected more than 70 years ago, is recorded from both East and West New Britain Provinces, Papua New Guinea. The female is described and both sexes, including the holotype male, are illustrated for the first time. This taxon is compared with the nominate subspecies from New Ireland.

Introduction

Chilasa moerneri (Aurivillius) is one of a small group of allopatric *Chilasa* Moore species that occur in Indonesian Papua, Papua New Guinea and the Solomon Islands (Hancock 1983, 2009). This species has always intrigued collectors and researchers. Until recently, only a handful of specimens of the nominate race were known and the female had been misidentified as a male. The species was regarded as probably extinct by D'Abrera (1971). The prepupal larva and pupa of the nominate subspecies were described by Müller (2001), who compared them with those of *C. laglazei* (Depuiset) and *C. toboroi* (Ribbe).

Chilasa moerneri mayrhoferi (Bang-Haas) was described from a single male (Figs 1-2) collected in the south-east Baining Mountains, East New Britain Province, Papua New Guinea. It is held in the Dresden Museum, Germany. The precise position of the type locality is unknown. Müller (2001) erroneously assumed that the type had been lost.

Otto Bang-Haas (1939a, b) described *C. m. mayrhoferi* (as *Papilio mörneri mayrhoferi*) and *Delias mayrhoferi* Bang-Haas, both without figures, on the eve of the Second World War. The latter name was overlooked and confused with the junior synonym *D. schunichii* Morita, 1996 for several decades (Häuser *et al.* 2009, Müller and Wills 2013).

Records

A male of *C. m. mayrhoferi* was observed by one of us (CM) in December 2005, in the Whiteman Range, West New Britain, as it flew along a ridge at height. On the northern slopes of the Baining Mountains, East New Britain, during the second week of December 2006, a solitary *C. m. mayrhoferi* was observed and filmed by LW as it flew around the top of an *Albizia* tree (Mimosaceae) at a height of about 35 m. From approximately 1100 to 1400 h,

the adult circled the tree, stopping to take nectar on only three occasions. Due to its exceptionally wide trunk, the tree could not be climbed. At 1100 h the following morning, the specimen returned and began to repeat the circling behaviour observed the previous day. A plan was devised to climb a smaller adjacent tree of about 30 m and build a platform at the top. With a net balanced on top of a 12 m long handle, the specimen could hopefully be reached. After precariously perching on the platform and enduring the scorching heat for almost three hours, the specimen was finally captured. Since 2011, both LW and CM have recorded a limited number of both sexes in the Baining Mountains and the Whiteman Range, respectively. All specimens were collected between 800 and 1100 m.

Chilasa moeneri mayrhoferi (Bang-Haas)

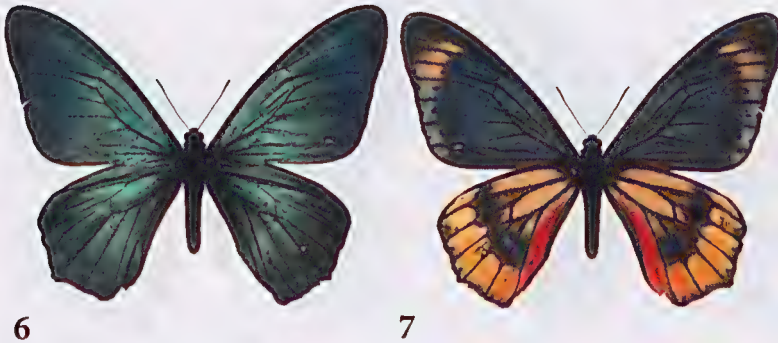
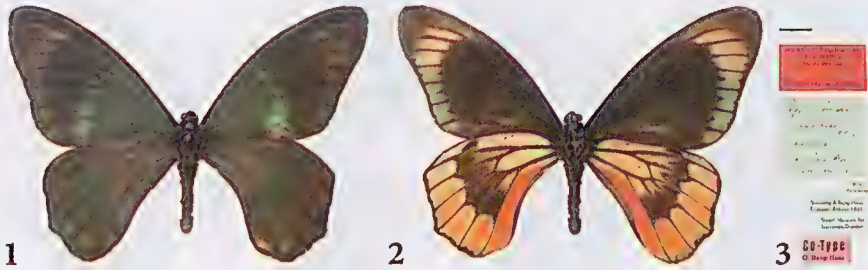
(Figs 1-9)

Description of female (Figs 8-9). Head, thorax and legs black, abdomen dark green-black. Antenna short, approximately one-third length of costa, black, elongated clubs. Forewing upperside shining dark green, postmedian area broadly dark blue, apical area dark blue suffused with grey. Forewing underside dark lustrous grey-green, a subterminal band of yellow spots reaching into subapical area as far as space 7, band up to 6 mm wide towards costa. Hindwing upperside shining dark green, darkening towards termen. Hindwing underside pale yellow; costa, termen and veins broadly lustrous grey-green; a postmedian band of lustrous grey-green between costa and vein 2, sharply defined and stepped between veins on termen side and more diffuse and arrow-shaped on basal side; between inner margin and vein 2 bright orange, except at base along cell which is pale yellow.

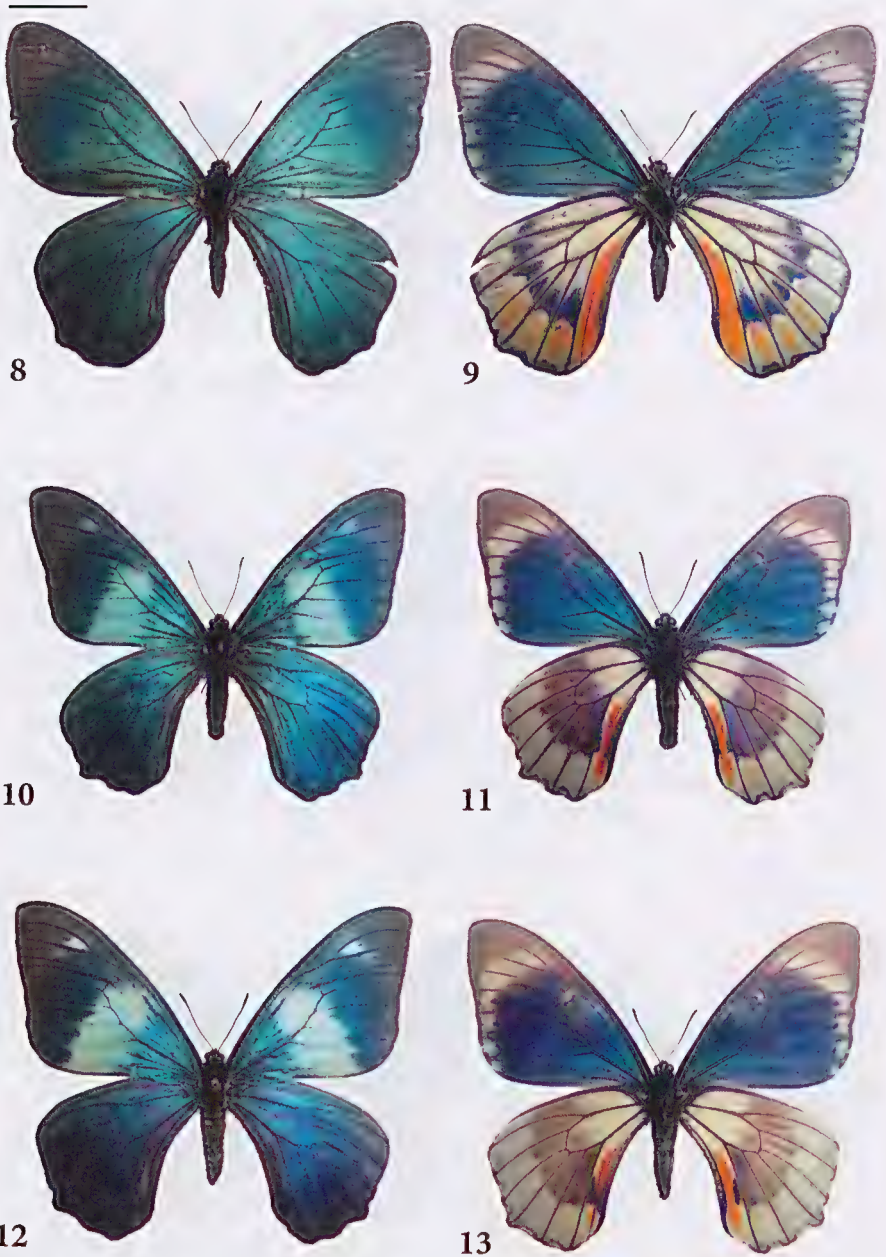
Measurements (mm). Forewing length mean 63 (n = 2); antenna length mean 16 (n = 2).

Discussion

As noted by Bang-Haas (1939a) in his original description, there are numerous differences between the two subspecies of *C. moeneri*. Most notable is the dark green upperside ground colour, which is essentially uniform in *C. m. mayrhoferi* and well banded in the nominate subspecies (Figs 10-13). Additionally, the dark median band on the hindwing underside is much narrower in *C. m. mayrhoferi* than in the nominate subspecies, such that the cell and discocellulars are outlined against the pale ground colour in the latter. The ground colour is cream in the nominate subspecies, yet yellow shot with orange in *C. m. mayrhoferi*. The inner margin of the hindwing underside is conspicuously orange from the base to the tornus in *C. m. mayrhoferi*, whereas orange is confined to the median area in *C. m. moeneri*. The termen is boldly black on the hindwing underside in *C. m. mayrhoferi*, whereas it is less distinct and scalloped in the nominate subspecies. *C. m. mayrhoferi* appears to exhibit some variation in the extent of the median band



Figs 1-7. (1-3) *Chilasa moerleri mayrhoferi*, holotype male: (1) upperside; (2) underside; (3) data labels. (4-7) *C. m. mayrhoferi*, male: (4) upperside (Baining Mts); (5) ditto, underside; (6) upperside (Whiteman Range); (7) ditto, underside. Scale bar = 20 mm.



Figs 8-13. (8-9) *Chilasa moerneri mayrhoferi* female: (8) upperside (Baining Mts); (9) underside. (10-13) *C. moerneri moerneri*: (10) male upperside (Schleinitz Mts); (11) ditto, underside; (12) female upperside (Schleinitz Mts); (13) ditto, underside. Scale bar = 20 mm.

on the forewing upperside and the width of the submarginal band on the forewing underside. The pale underside ground colour also appears to exhibit slight variation in intensity of the orange suffusion. Bang-Haas (1939a) described *C. m. mayrhoferi* as the 'connection' between typical *C. m. moeneri* from New Ireland and *C. toboroi* from the Solomon Islands. It is unclear whether Bang-Haas was referring to an apparent geographical or phenotypic link and neither is applicable.

Adults of *C. moeneri* behave similarly to those of related *Chilasa* species in the region (CM pers. obs.). Both sexes may occasionally be seen flying at great height above the canopy and males will sometimes establish territories in clearings or around tall trees in the rainforest. Adults have a strong, direct flight with rapid wing beats interspersed with gliding. It is possible that *C. moeneri* mimics the day-flying moth *Alcides aurora* Salvin & Godman (Uraniidae), which is also endemic to the Bismarck Archipelago. However, the latter is most common in the lowlands, where *C. moeneri* does not occur, and the moth usually flies low, close to the ground in open areas, in contrast to the adults of *C. moeneri*.

The larval food plants of *C. moeneri* are unrecorded in the literature. However, larvae of *C. m. moeneri* have been located by us on two species of *Litsea* (Lauraceae) in the Schleinitz Mountains, central New Ireland.

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